NAVSEA
KEYPORT
Undersea Warfare Center Division

WELCOME

to the Navy's Public Hearing for the NAVSEA NUWC Keyport Range Extension EIS/OEIS

The Navy proposes to extend the operational areas associated with the Naval Sea Systems Command (NAVSEA) Naval Undersea Warfare Center (NUWC) Keyport Range Complex in Washington State.

AGENDA

Open House — 5:00 p.m. to 6:30 p.m.
Break — 6:30 p.m. to 7:00 p.m.
Navy Presentation — 7:00 p.m. to 7:20 p.m.
Oral Comments — 7:20 p.m. to 9:00 p.m.

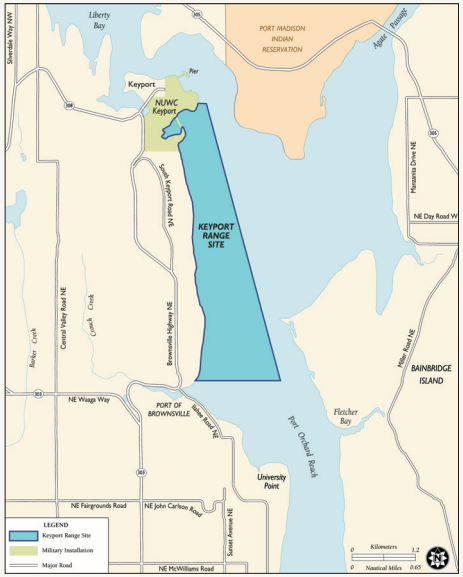
For further information, please visit the project website at: http://www-keyport.kpt.nuwc.navy.mil/EIS_Home.htm

Keyport Range Complex Overview

The NAVSEA NUWC Keyport Range Complex is composed of three geographically distinct range sites: Keyport Range Site, Dabob Bay Range Complex (DBRC) Site, and Quinault Underwater Tracking Range (QUTR) Site. NUWC Keyport has a long standing history of conducting ranging activities at the sites.

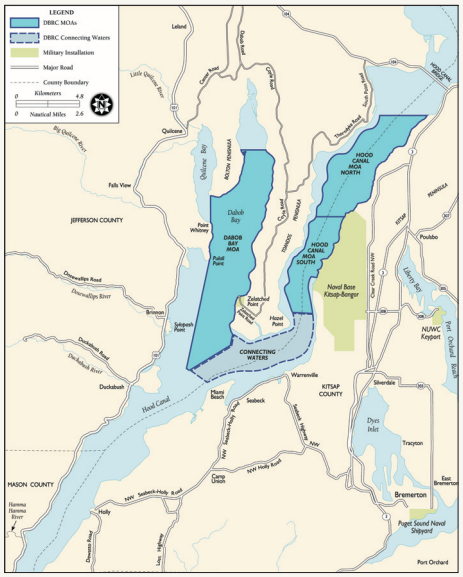
Keyport Range Site

- Size - 1.5nm^2 (5.1 km^2)
- Keyport Range Site is located in Port Orchard Reach, adjacent to NUWC Keyport.
- Navy has conducted underwater testing at the Keyport Range Site since 1914.
- Current utilization averages 55 days per year.



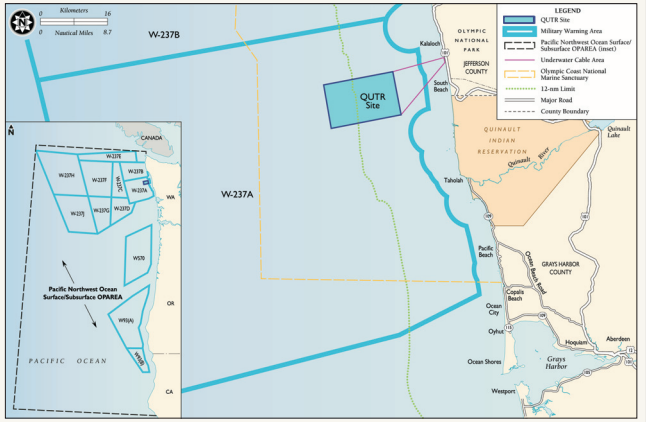
DBRC Site

- Size - 32.7nm^2 (112.1 km^2)
- Located in Dabob Bay and Hood Canal.
- DBRC Site includes the Dabob Bay Military Operating Area (MOA), the Hood Canal North and South MOAs, and connecting waters.
- Navy has conducted underwater testing at Dabob Bay since the 1950s.
- Recognized as a critical national defense asset.
- Current utilization averages 200 days per year.



QUTR Site

- Size - 48.3nm^2 (165.5 km^2)
- Located off the Pacific coast at Kalaloch.
- Navy has conducted underwater testing at the QUTR Site since 1981 and maintains a control center at the Kalaloch Ranger Station.
- Current utilization averages 14 days per year.



Explosive warheads are not placed on test units or tested within the range complex.

Keyport Range Mission and Proposed Action

Mission

- NUWC Keyport has a unique mission in military readiness. We participate in research and development and conduct test and evaluation of undersea weapons and systems.
- Our mission requires extending traditional areas to accommodate advances in technology, enabling us to provide the best weapons and systems to our Sailors, Marines and First Responders. Their safety and their mission success depend on it.
- Testing conducted by NUWC Keyport provides critical validation of the Navy's undersea systems, and supports applications for Homeland Security.

Purpose and Need

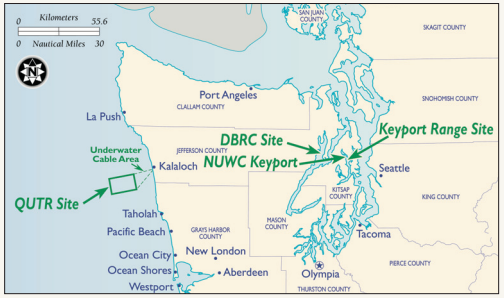
- Technological advancements in the materials, instrumentation, guidance systems, and tactical capabilities of manned and unmanned vehicles continue to evolve.
- Range extension is needed to satisfy evolving technologies and test requirements of next generation manned and unmanned systems.
- Navy requires a range complex that provides a broader diversity of sea state conditions, bottom type, water depth, and increased room to maneuver and combine test activities.

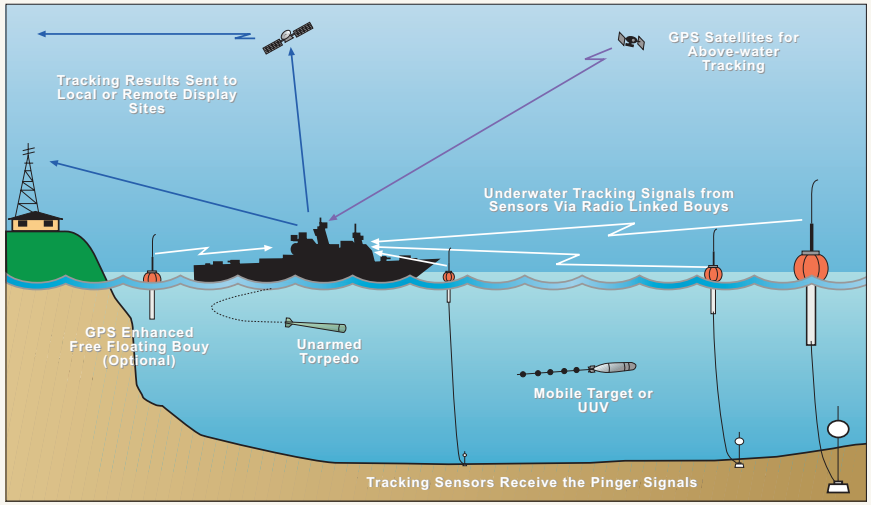
Proposed Action

- Provide additional operating space at each of the three range sites.
- Increase average annual number of days and activities at the Keyport Range Site and QUTR Site.
- Scope of proposed action includes only activities scheduled and managed by NUWC Keyport.

Current and Proposed Average Annual Days of Use by Range Site

	Keyport Site	DBRC Site	QUTR Site - Offshore	QUTR Site - Surf Zone
Current	55	200	14	0
Proposed	60	200	16	30
Net Increase	5	0	2	30





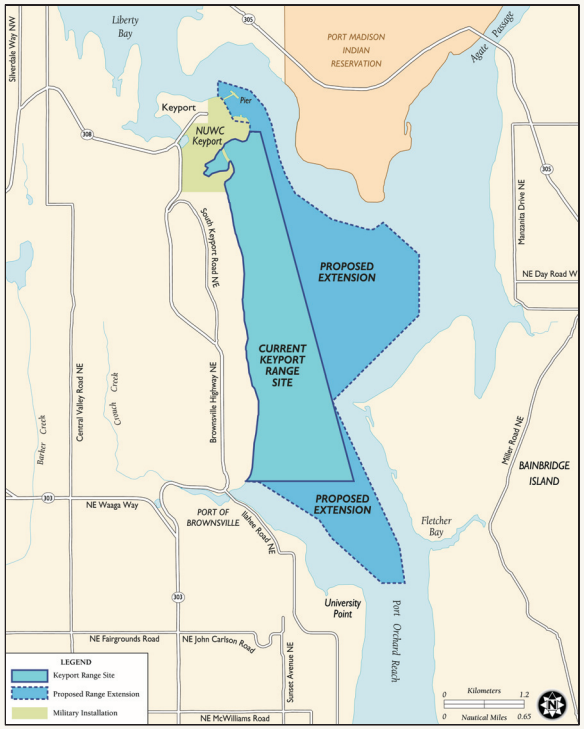
Components of a Typical NUWC Keyport Test Activity

Proposed Range Extension Alternatives

NAVSEA KEYPORT
Undersea Warfare Center Division

Keyport Range Site

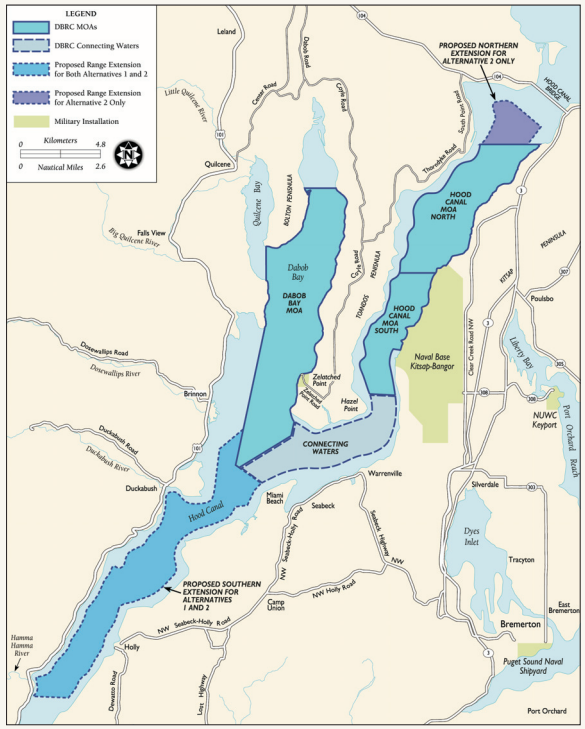
Alternative 1—Extend existing range boundaries north, south, and east; average annual days of activities would increase from a current 55 days to 60 days (preferred alternative)



DBRC Site

Alternative 1—Extend southern boundary; average annual days of activities would not increase

Alternative 2—Extend both the southern and northern boundary; average annual days of activities would not increase (preferred alternative)



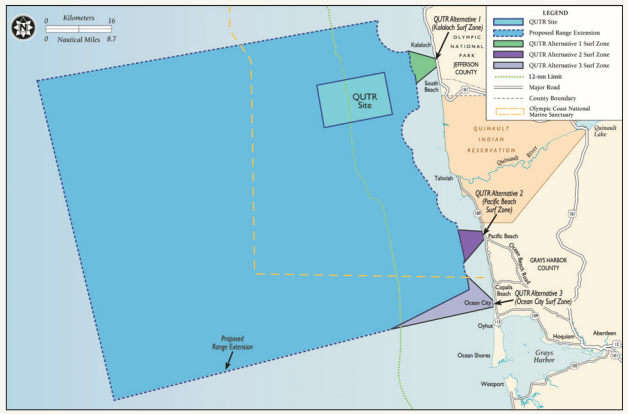
QUTR Site

Alternative 1—Extend boundaries to coincide with overlying special use airspace and establish a surf zone at Kalaloch

Alternative 2—Extend boundaries as in Alternative 1 but establish a surf zone at Pacific Beach (preferred alternative)

Alternative 3—Extend boundaries as in Alternative 1 but establish a surf zone at Ocean City

Under all three QUTR Site alternatives, average annual days of offshore activities would increase from a current 14 days to 16 days and within the surf zone from minimal to an average of 30 days per year.



Evaluating Acoustic Effects on Marine Life

No acoustic harm or harassment is anticipated to occur to any federally listed endangered species as a result of any of the alternatives.

Evaluating the Effects of Sound in the Water

The Navy evaluated potential effects of active acoustic sources on biological resources occurring within the three range sites proposed for extension.

- Marine mammals including cetaceans (e.g., orcas and gray whales) and pinnipeds (e.g., harbor seals and California sea lions)
- Fish
- Diving birds
- Marine invertebrates (e.g., clams, crabs, geoducks)

Marine Mammal Hearing

- The quietest sound a marine mammal can hear at a specific frequency is called the hearing threshold.
- Exposure to sounds exceeding a certain intensity and duration causes the hearing threshold to shift.
- In a temporary threshold shift (TTS), hearing recovers over time after the exposure to sound ends.
- As sound exposure intensity and duration increase beyond a certain level, a permanent threshold shift (PTS) occurs.
- Sound exposure can also disrupt important activities or mask biologically important sounds.
- Behavioral reactions to sound depend on the level of sound received and the sensitivity of the individual.

EIS/OEIS Analysis of Acoustic Effects

Regulatory Framework:

- Marine Mammal Protection Act and Endangered Species Act - both prohibit unauthorized harm or harassment to protected species
- Migratory Bird Treaty Act - requires consultation for significant adverse effects on migratory bird populations
- Magnuson-Stevens Fishery Conservation and Management Act - requires consultation for adverse effects on Essential Fish Habitat

Biological Resources Considered:

- Marine mammals - cetaceans and marine pinnipeds (the river otter is considered a terrestrial mammal)
- Diving birds (e.g., marbled murrelet)
- Fish, invertebrates, and sea turtles

Data Sources:

- Latest marine mammal density and distribution data by species, including seasons and depths of occurrence
- Review of marine mammal strandings and their causes
- Previous Federal and Washington State evaluations of the effects of underwater sound on diving birds
- Research results on hearing capabilities of fish, invertebrates, and sea turtles and potential sonar effects on these animals

Effects on Other Marine Animals

Diving Seabirds:

- There is no evidence seabirds use underwater sound.
- Seabirds spend a small fraction of time submerged.
- No harm to individuals or adverse effects on numbers or distribution are anticipated. The Navy is consulting with the U.S. Fish and Wildlife Service on the potential effect on the federally listed marbled murrelet.

Fish:

- The EIS/OEIS incorporates the most up-to-date review of available literature and research on acoustic effects on fish and invertebrates.
- No acoustic effects on endangered species of Salmonids or on Essential Fish Habitat are anticipated.

Marine Invertebrates and Sea Turtles:

- Decapods (crabs and shrimp) might detect sonar in close proximity, but reactions are unknown, and in any case only a very small number of individuals would be affected.
- Sea turtles very rarely occur on the NAVSEA NUWC Keyport Range Complex, and because they have poor hearing abilities and do not use sound underwater, no acoustic effects on sea turtles would occur.

Acoustic Modeling and Results

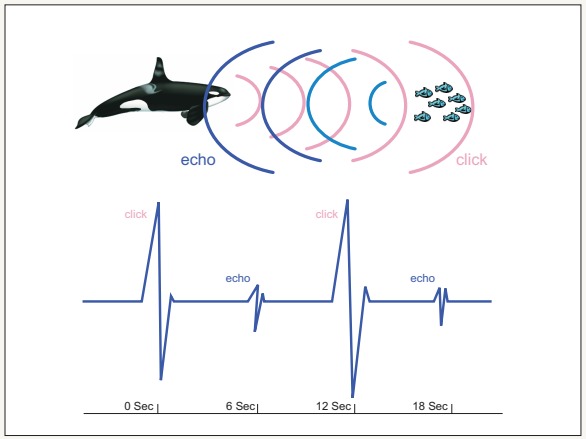
Sound in the Water

Key parameters:

- Source frequency (Low = < 1 kHz, Mid = 1-10kHz, High = > 10 kHz)
- Intensity and duration at the source
- Oceanographic conditions, shoreline, and bottom characteristics

How measured:

- Sound pressure level (SPL), an instantaneous measure
- Sound exposure level (SEL), a measure of accumulated energy from exposure over time

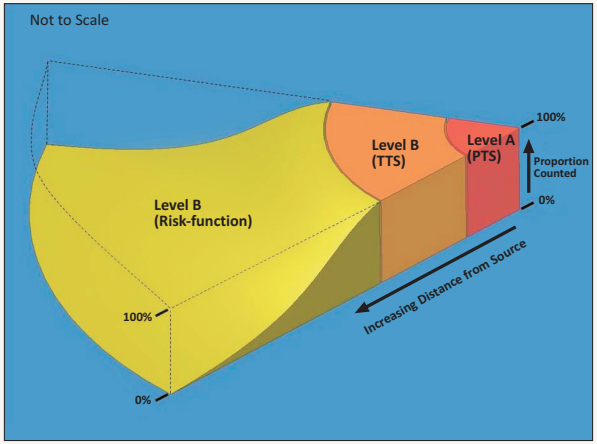


Acoustic Sources Modeled for Potential Effects

- Represent current and future systems used for underwater detection, measurement, identification, and communication
- Modeled sources are mid- to high-frequency
- Use of tactical surface ship and submarine hull-mounted sonars is not part of the proposed action and is not analyzed in this EIS/OEIS

Methodology

- Jointly developed by the Navy and NOAA National Marine Fisheries Service
- Conservatively assumes that effects/responses are the same for high-frequency sources as for mid-frequency
- General steps include:
  - Identify acoustic source parameters
  - Determine sound propagation loss
  - Calculate the zone of influence
  - Determine marine mammal densities
  - Predict potential exposures
- Uses thresholds for effects based on best-available science
  - Permanent threshold shift (PTS) = Level A Exposure
  - Temporary threshold shift (TTS) = Level B Exposure
- Recognizes that behavioral effects are likely to occur before permanent or temporary effects on hearing, and uses "Risk Function" to calculate probability of an individual reacting to sound, constituting behavioral, Level B Exposure



Exposure Zones Extending from a Sound Source

Summary of Modeled Effects on Marine Mammals

No acoustic harm or harassment is anticipated to occur to orcas, or any federally listed endangered species, as a result of any of the alternatives

Predicted Effects of the Proposed Action (Preferred Alternative):

- No mortalities are anticipated to occur.
- No Level A exposures for any species are anticipated.
- Level B TTS and Sub TTS behavioral exposures are anticipated for a few, relatively common species.

Annual MMPA Exposures for Keyport Range Alternative 1

Species	Level B *Risk Function (Sub TTS Behavioral)*	Level B *TTS*
Cetaceans		
All species	0	0
Pinnipeds		
Harbor seal	109	41

Annual MMPA Exposures for DBRC Alternative 2

Species	Level B *Risk Function (Sub TTS Behavioral)*	Level B *TTS*
Cetaceans		
All species	0	0
Pinnipeds		
Harbor seal	3,320	1,998
California Sea lion	109	0

Annual MMPA Exposures for all QUTR Alternatives

Species	Level B *Risk Function (Sub TTS Behavioral)*	Level B *TTS*
Cetaceans		
Harbor porpoise	11,282	1
Pinnipeds		
Harbor seal	78	23
Northern elephant seal	14	0
California sea lion	5	0
Northern fur seal	44	0

Our range operators are trained by NOAA to identify marine mammals.
If detected, activities are adjusted to ensure safety for marine mammals, public, and range personnel per standardized procedures.

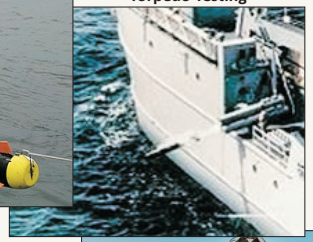
Non-Acoustic Effects on the Environment

NAVSEA KEYPORT Undersea Warfare Center Division

Environmental Practices

We operate in accordance with established guidance and regulations. Public, operational, and environmental safety are paramount on our range sites.

Unmanned Vehicle Activities



Torpedo Testing

Vessel Movement/Testing

Mine Shape Deployment/ Recovery Activities

- We strive to maintain open access around our activities to the maximum extent possible.
- We operate according to established guidance and regulations.
- We communicate range activity tempo with Native American Tribes, state regulators, academia and other Navy users in the area.
- Warning lights are used at Dabob to alert mariners of activity.
- We provide Notice to Mariners as appropriate.

Affected Environment and Consequences

Terrestrial Wildlife
- Potential for localized, temporary disturbance of wildlife; no takes of listed species or effects on bald eagles anticipated.

Marine Flora and Invertebrates
- Minor benthic habitat disturbance; no impact on eelgrass or invertebrate populations.

Fish
- Minor, temporary habitat disturbance but minimal to no effects on fish populations or Essential Fish Habitat.

Marine Mammals
- Collisions, adverse effects of expended materials (e.g., ingestion, entanglement) considered very unlikely, no takes anticipated.

Sediments and Water Quality
- Localized, temporary effects due to expended materials will be handled by procedure.

Cultural Resources
- No impacts to known archaeological sites or shipwrecks. NUWC Keyport would continue established communication protocols with Tribes.

Recreation, Land and Shoreline Use
- Little change to existing conditions. Areas of activity would be temporarily off-limits.

Public Health and Safety
- Proposed activities are not inherently dangerous, and pose little risk to the public.

Socioeconomics and Environmental Justice
- No change to socioeconomic conditions, no disproportionate effects on minorities.

Air Quality
- Pollutant emissions would be below *de minimis* levels.

Statutory and Regulatory Compliance

NEPA and EO 12114
- The EIS/OEIS is prepared in compliance. Draft conclusions are that no long-term or large-scale adverse impacts are anticipated. Findings and Record of Decision will follow consideration of public input.

Marine Mammal Protection Act
- The Navy is consulting with the National Marine Fisheries Service to obtain a Letter of Authorization for anticipated harassment to marine mammals.

Magnuson-Stevens Fishery Conservation Management Act
- The Navy completed an Essential Fish Habitat (EFH) Assessment and concluded that any effects would be minimal and temporary and would not appreciably diminish the quality or quantity of EFH for any managed species.

Endangered Species Act
- The Navy is consulting with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service for federally listed species.

Coastal Zone Management Act
- The Navy is coordinating with the Washington Department of Ecology for a Coastal Consistency Determination.

Clean Air Act
- No impacts to regional air quality.

Clean Water Act
- Minimal, temporary impacts to water quality.

National Historic Preservation Act
- No impacts to cultural resources.

Migratory Bird Treaty Act
- No adverse effects on migratory bird populations.

Bald and Golden Eagle Protection Act
- No disturbance to nesting or roosting bald eagles.

Public Involvement

Navy Commitment

- Continue the strong record of environmental stewardship on the NAVSEA NUWC Keyport Range Complex
- Apply best-available science to analyze and document the anticipated effects of Navy-generated underwater sound in this EIS/OEIS
- Minimize wherever possible the potential adverse effects resulting from the use of sound, which is essential to military readiness in underwater communication and threat detection

Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

Under the National Environmental Policy Act (NEPA), federal agencies are required to prepare an Environmental Impact Statement (EIS) for major federal actions. For elements of the proposed action occurring outside the 12-nautical mile limit of U.S. Territorial waters, Executive Order 12114 (Environmental Effects Abroad of Major Federal Actions) also applies.

An EIS/OEIS evaluates the potential environmental impacts of a major federal action. NEPA provides opportunities for public involvement in the EIS/OEIS process as shown to the right.

EIS/OEIS Process

Notice of Intent (NOI)
(September 2003)

↓

Public Scoping
(September 2003 - January 2004)

↓

Draft EIS/OEIS
(January 2004 – August 2008)

↓

Public Comment
(September 2008 - October 2008)

Agency Review and Comment

↓

Final EIS/OEIS
July 2009

↓

Public Comment Period
(August 2009)

↓

Record of Decision (ROD)
(Fall 2009)

Your Involvement is Important

There are three opportunities for public input to the EIS/OEIS process. The first opportunity was during scoping, held in late 2003. The second opportunity is during this public comment review and hearing period. Comments and concerns expressed during the scoping period were considered in the development of the Draft EIS/OEIS. The Draft EIS/OEIS was distributed and made available at local libraries and on the project website. The public is now invited to review and comment on the findings and results presented in the Draft EIS/OEIS. A third opportunity will be provided when the Final EIS/OEIS is made available for comment, and the resulting comments are considered in the Record of Decision.

There are multiple ways to provide your comments:

1. Fill out a comment sheet provided at the public hearings
2. Register as a speaker and provide oral comments at the public hearings
3. Visit our project website and comment electronically
4. Mail your comments to:

Mrs. Kimberly Kler, Environmental Planner

NAVFAC Northwest

1101 Tautog Circle, Suite 203

Silverdale, WA 98315-1101

To ensure that the comments are addressed in the Final EIS/OEIS, they must be provided no later than October 27, 2008.